

Regenerable Lunar Airborne Dust Filter, Phase I

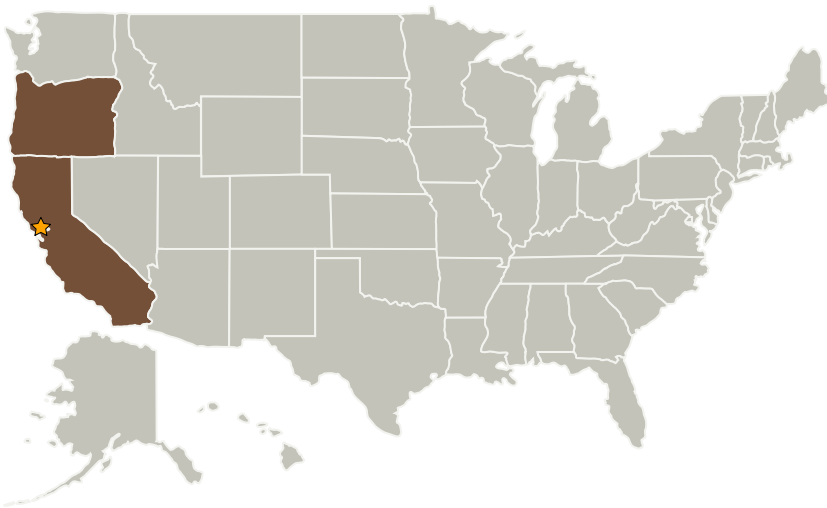
Completed Technology Project (2009 - 2009)



Project Introduction

Effective methods are needed to control pervasive Lunar Dust within spacecraft and surface habitations. Once inside, airborne transmission is the primary mode of dispersion. Inhalation of this fine powder may pose a serious health risk. Lunar dust may cause degradation of materials, interfere with proper operation of instrumentation & controls, and may prevent formation of adequate seals. To solve this problem, we propose the development of a fully regenerable hypogravity compatible filtration system for removal of Lunar Dust from air, suitable for deployment within the Lunar Surface Access Module (LSAM) and Lunar Outpost (LO). Using microgravity and hypogravity compatible Gradient Magnetically Assisted Filtration/Fluidization Bed (GMAFB) technology, we will develop a fully regenerable Airborne Lunar Dust Filtration System. The system will minimize Equivalent System Mass (ESM) by the elimination of expendables.

Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|-------------------------------|-------------------------|-------------|---------------------------|
| ★Ames Research Center(ARC) | Lead Organization | NASA Center | Moffett Field, California |
| UMPQUA Research Company | Supporting Organization | Industry | Myrtle Creek, Oregon |



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

California

Oregon

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX07 Exploration Destination Systems
 - └ TX07.2 Mission Infrastructure, Sustainability, and Supportability
 - └ TX07.2.5 Particulate Contamination Prevention and Mitigation